

# OUT-OF-CLASSROOM SCIENCE EDUCATION IN EUROPE: A MAPPING STUDY OF PRACTICES AND PATHS TO ACCREDITATION

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## Introduction

While formal education remains prevalent across European schools, Education Outside the Classroom (EOC) is gaining traction as a means to foster more comprehensive learning (Eurydice, 2007). EOC entails curriculum-based activities conducted beyond traditional classrooms, offering diverse benefits such as improved reasoning, skills, and personal development (McCormack et al., 2022).

The potential of EOC in broadening educational horizons and its varied implementation settings necessitate standardised recognition and accreditation. This study, part of the OTTER project (H2020), aims to understand EOC's structure and practices in European countries. Through mapping EOC practices, the study identifies locations, actions, and programmes promoting EOC, contributing to discussions on EOC accreditation framework.

## Methodology

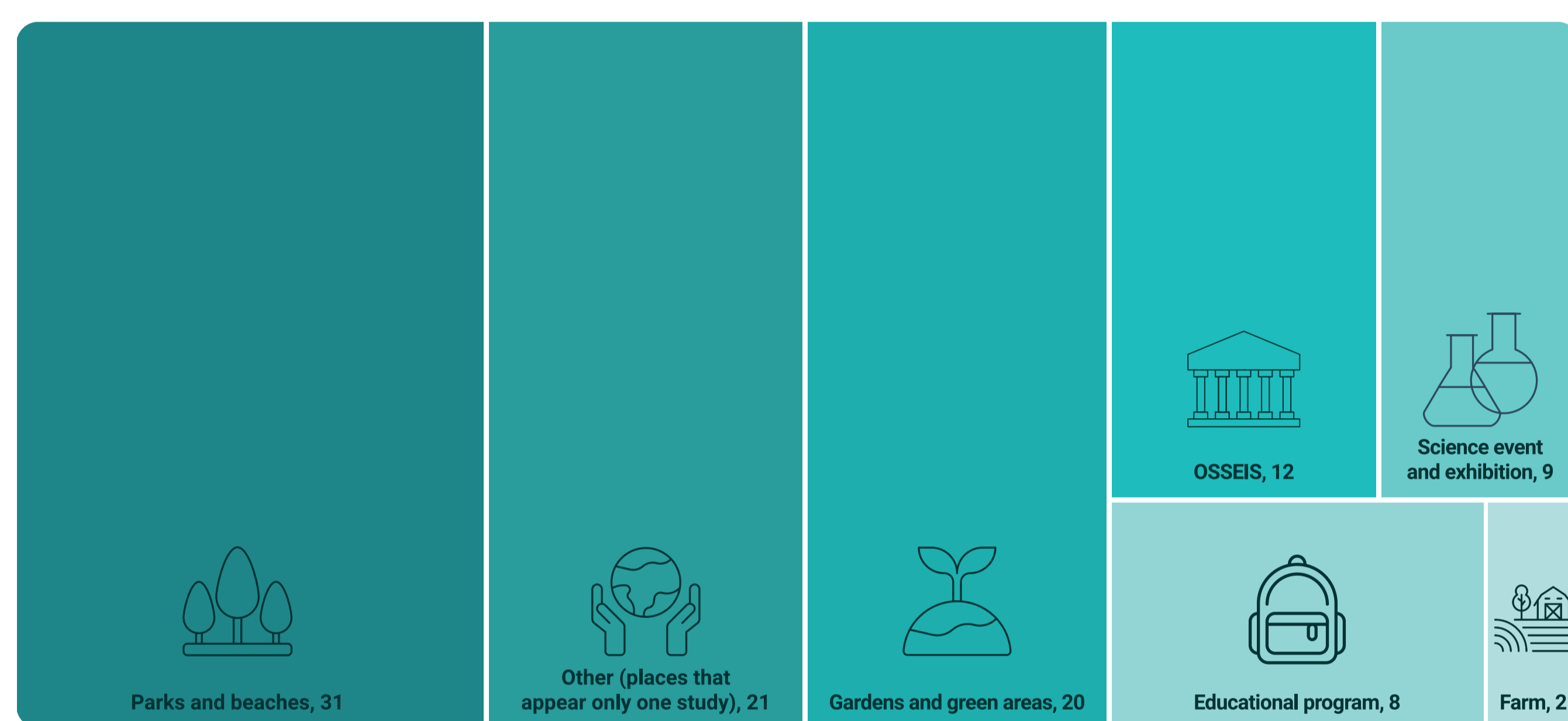
The study employed a two-way mapping approach, covering "practices to places" and "places to practices" within EOC. For "practices to places," EOC activities across European countries were identified and mapped using results from a systematic literature review, expanding the scope to diverse contexts. In the "places to practices" aspect, potential EOC spaces were mapped across Europe, focusing on spaces with untapped EOC potential (Azevedo et al., 2023).

The systematic mapping method (James et al. 2016) involved forming a review team, setting scope and inclusion criteria, evidence search, coding, creating a systematic map database, visualising data, and generating a comprehensive report. Data analysis considered EOC definition and educational accreditation factors like safety, accessibility, and curriculum alignment.

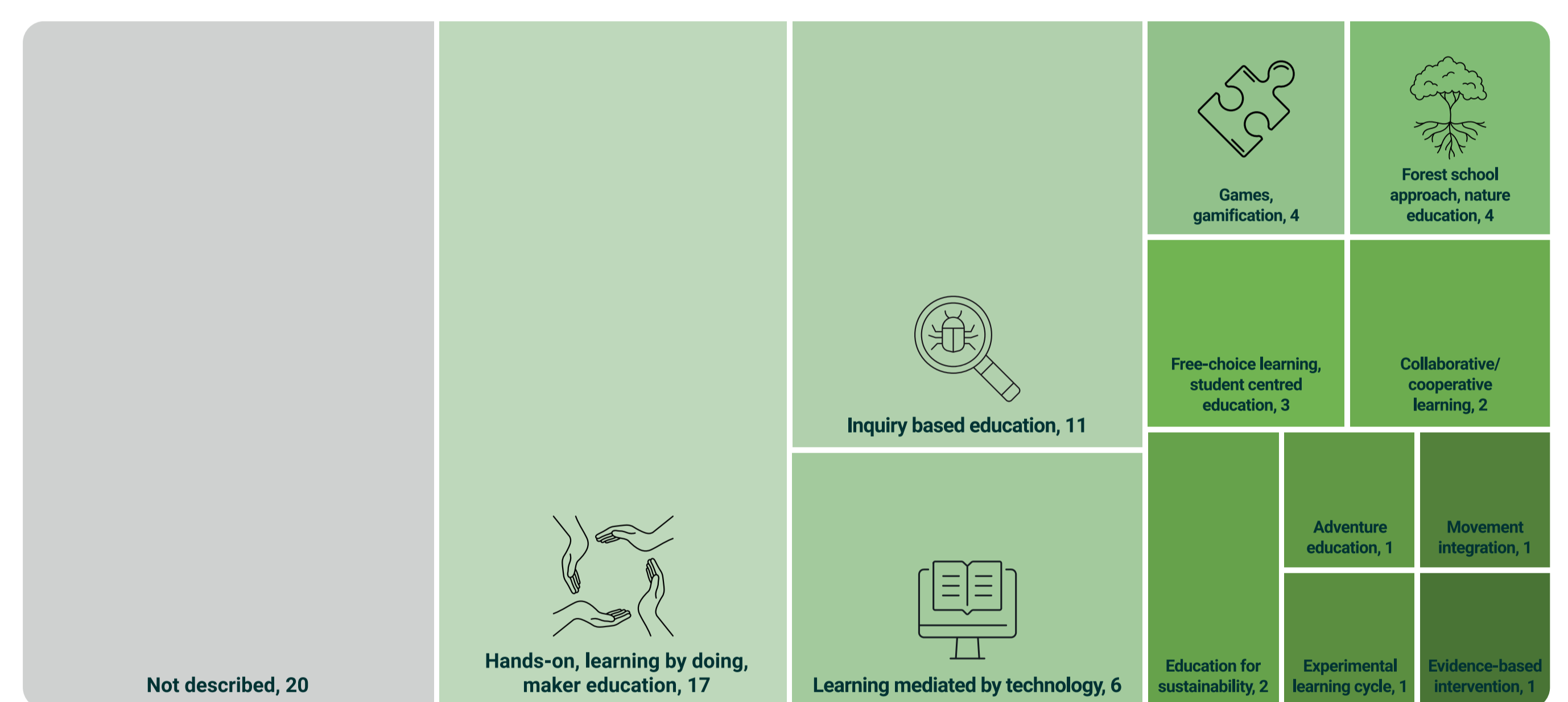
## Findings & Discussion

**Practices to places:** Mapped **65 studies** across 14 European countries. Diverse EOC spaces - 27 types, including parks, beaches, and gardens. Institutions played a role, like museums and educational programs. Varied didactic approaches, with 30% not explicitly adopting one. Dominant categories were "Hands-on," "Inquiry-based education," and "Learning mediated by technology." Wide-ranging activity durations. Biology prevalent, STEM/STEAM and sustainability notable.

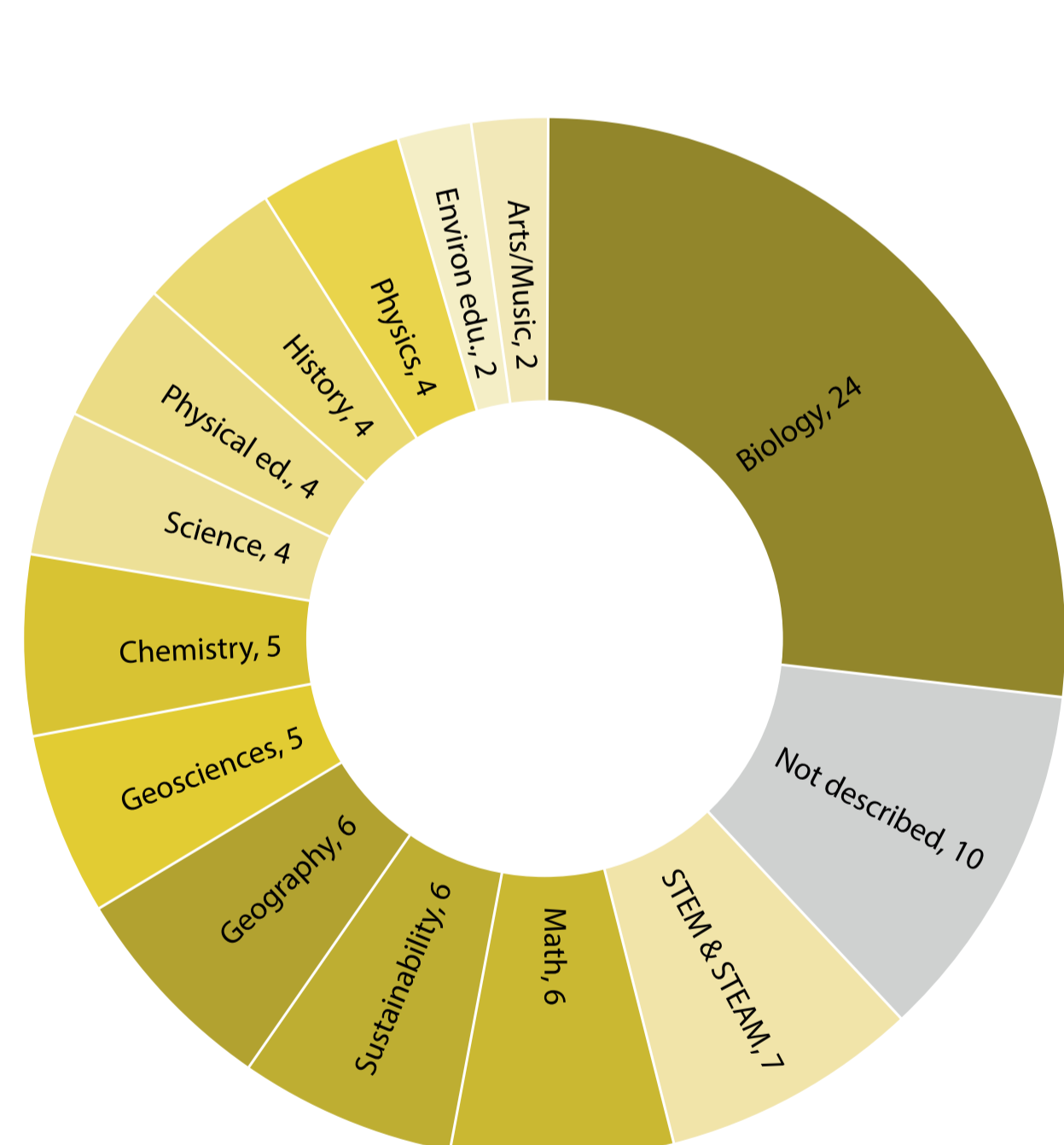
**Places to practices:** Database of **187 items** showcasing EOC diversity (countries included: Cyprus, Finland, France, Hungary, Ireland, Spain, The Netherlands). Prominence of science museums (30%) and science centers (12%). Other sites included botanical gardens, educational programs, and planetariums, exceeding 70% of total. Safety, inclusion, and accessibility concerns identified.



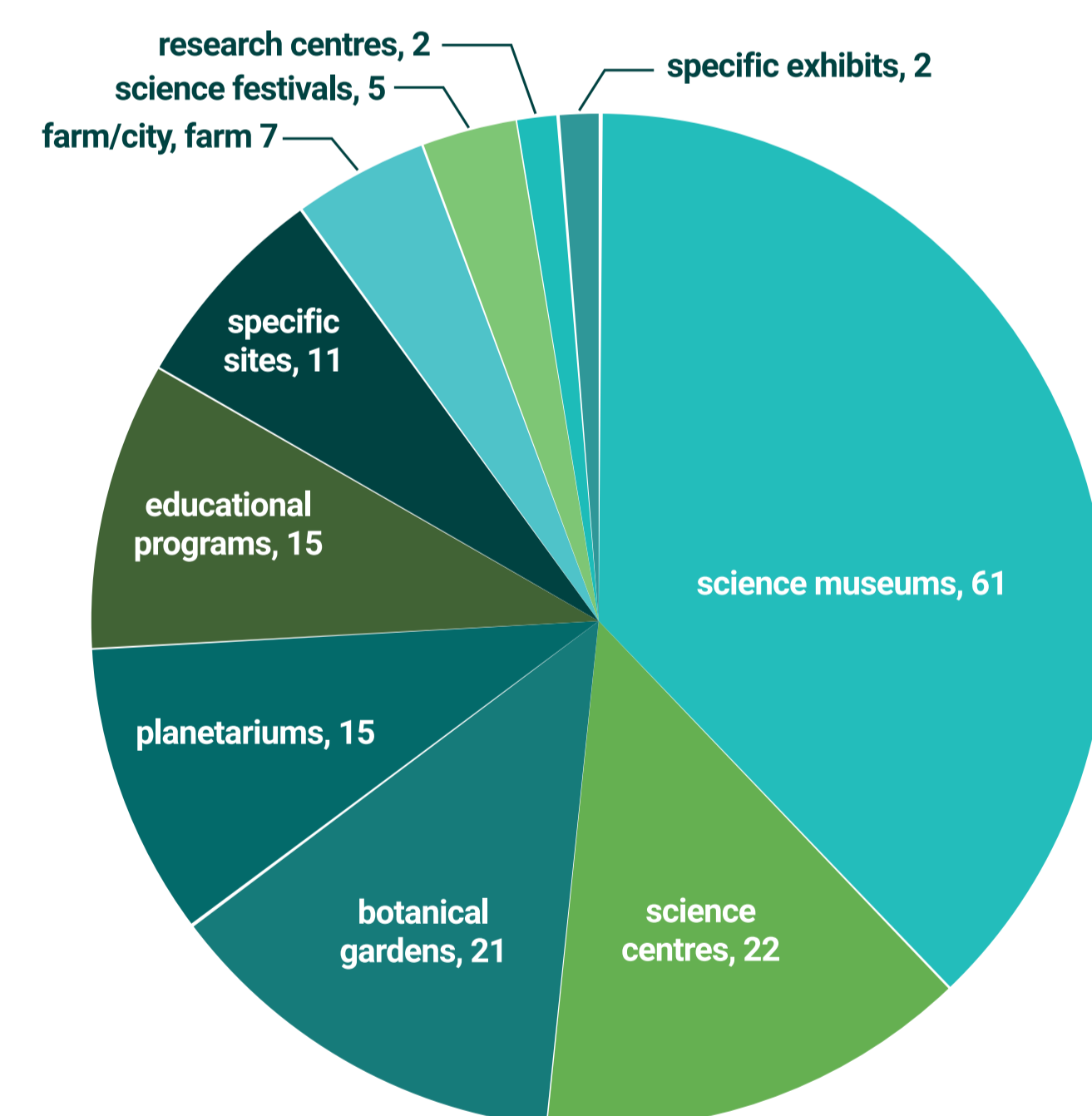
Studies according to spaces, initiatives, and places used for EOC.



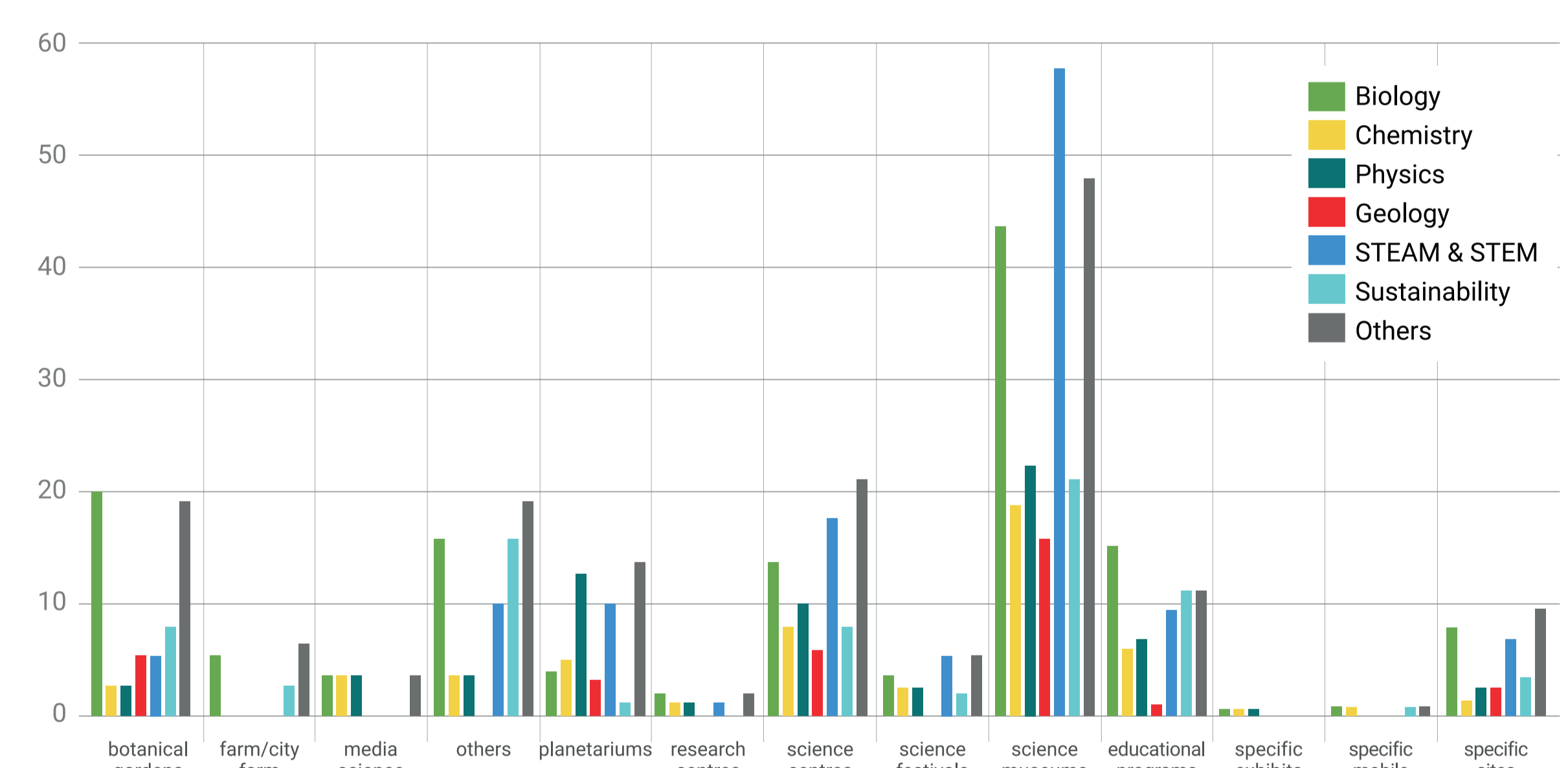
Studies according to pedagogic approaches used for EOC activities.



Studies according to curricular content covered during EOC activities



Places, events and programs for EOC practices in the OTTER partner countries



EOC contents according to places, events and programs for EOC activities in the partner countries.

## Discussion

The study highlights the prevalence of EOC in specific European nations, particularly emphasising outdoor settings. While Biology stands out as a core theme, the significance of STEM/STEAM, sustainability, physics, and chemistry underscores an interdisciplinary approach. Notably, science museums emerge as comprehensive hubs for EOC practices, reflecting their multifaceted thematic coverage.

Curriculum alignment, assessment methodologies, staff qualifications, and accessibility emerge as key concerns. Tackling these gaps can enhance the effectiveness of EOC practices and contribute substantially to the process of accreditation. It's essential to recognise that while diverse geographic contexts were covered, limitations related to search scope and language focus were acknowledged, suggesting avenues for future enhancements.

## REFERENCES

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